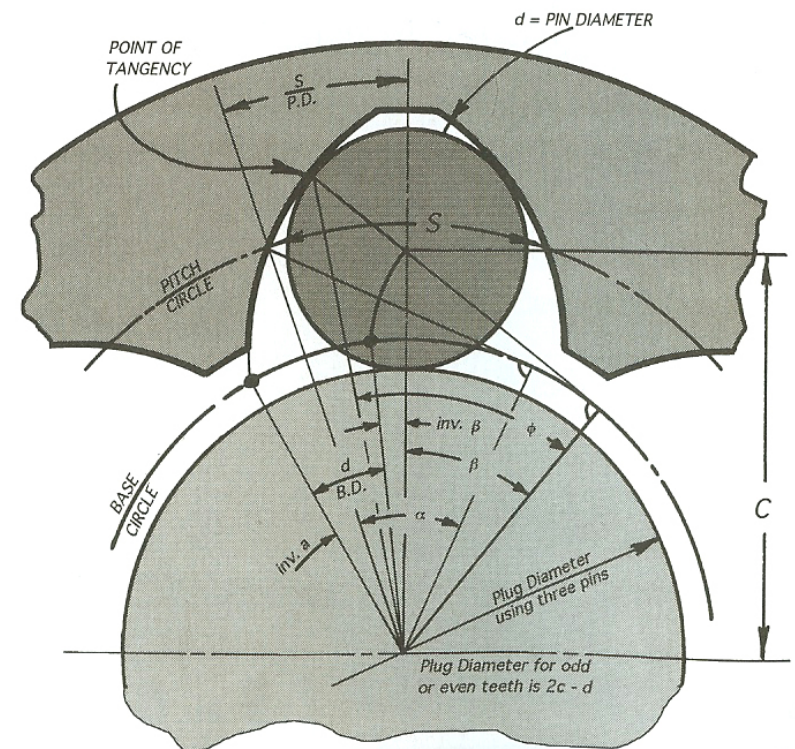


**INTERNAL SPUR GEARS - Determining Dimensions Under Pins**

TO GET	HAVING	RULE	FORMULA
N	Number of teeth	Given	12
DP	Diametral pitch	Given	24
$\alpha$	Pressure angle	Given	14.5
s	Arc space width	Given	0.06800
d	Pin diameter	Given	0.06701
PD	Pitch diameter	N/DP	0.50000
BD	Base diameter	PD•COS( $\alpha$ )	0.48407
A		s/PD	0.13600
D		d/BD	0.13843
INV $\alpha$	Involute function of $\alpha$	TAN( $\alpha$ )-[ $\alpha(\pi/180)$ ]	0.00554
INV $\beta$	Involute function of $\beta$	A+INV $\alpha$ -D	0.00312
$\beta$	Pressure angle to pin center	see tables page (G14)	11.00809
CC	Twice the center distance of pin and gear	BD/COS( $\beta$ )	0.49488
DE	Dimension under pins even # of teeth	CC-d	0.42787
DO	Dimension under pins odd # of teeth	CC•COS(90/N)-d	*
$\Phi$	Pressure angle to point of tangency	TAN( $\Phi$ )=TAN( $\beta$ )+D	19.33857
RT	Radius to point of tangency	BD/[2•COS( $\Phi$ )]	0.25651



**INTERNAL SPUR GEARS - Determining Arc Space Width Given Dimensions Under Pins**

TO GET	HAVING	RULE	FORMULA
N	Number of teeth	Given	44
DP	Diametral pitch	Given	24
$\alpha$	Pressure angle	Given	14.5
d	Pin diameter	Given	0.06701
DE	Dimension under pins even # of teeth	Given	1.76152
DO	Dimension under pins odd # of teeth	Given	*****
PD	Pitch diameter	N/DP	1.83333
BD	Base diameter	PD•COS( $\alpha$ )	1.77494
CE	Twice the center distance of pin and gear even # of teeth	DE+d	1.82853
CO	Twice the center distance of pin and gear odd # of teeth	(DO+d)/COS(90/N)	*****
$\beta$	Pressure angle to pin center	COS( $\beta$ )=BD/CE or CO	13.90611
INV $\beta$	Involute function of $\beta$	TAN( $\beta$ )-[ $\beta(\pi/180)$ ]	0.00488
D		d/BD	0.03775
INV $\alpha$	Involute function of $\alpha$	TAN( $\alpha$ )-[ $\alpha(\pi/180)$ ]	0.00554
s	Arc space width	PD(INV $\beta$ +D-INV $\alpha$ )	0.06800

